



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area  
**NADINE URCIUOLI [HARMON SHUGGE]**

Machine Id  
**VOLVO A434551**

Component  
**Center Diesel Engine**

Fluid  
**VOLVO PENTA SAE 15W40 (9 QTS)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>VPA057134</b>	VPA055558	VPA029668
Sample Date		Client Info		<b>28 May 2024</b>	08 Jun 2023	22 Feb 2021
Machine Age	hrs	Client Info		<b>775</b>	679	435
Oil Age	hrs	Client Info		<b>775</b>	679	207
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal for time on oil.

Iron	ppm	ASTM D5185m	>80	<b>117</b>	94	187
Chromium	ppm	ASTM D5185m	>6	<b>9</b>	6	12
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	2	5
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Aluminum	ppm	ASTM D5185m	>20	<b>10</b>	13	10
Lead	ppm	ASTM D5185m	>95	<b>1</b>	4	4
Copper	ppm	ASTM D5185m	>85	<b>7</b>	7	17
Tin	ppm	ASTM D5185m	>9	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

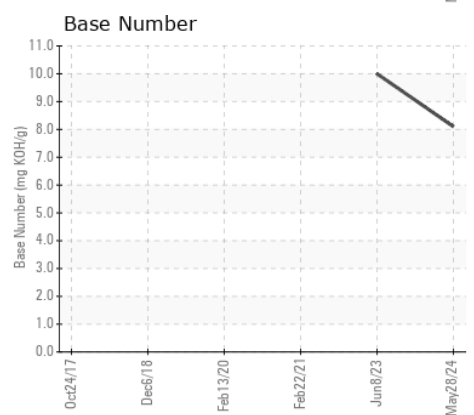
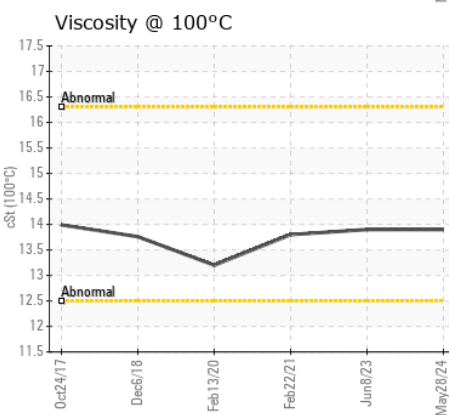
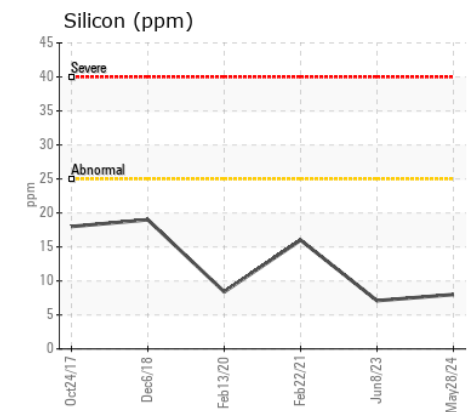
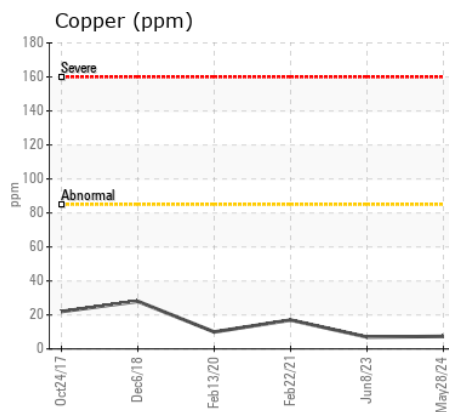
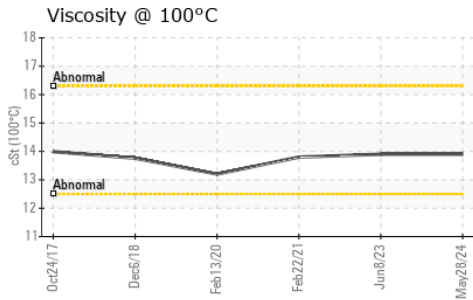
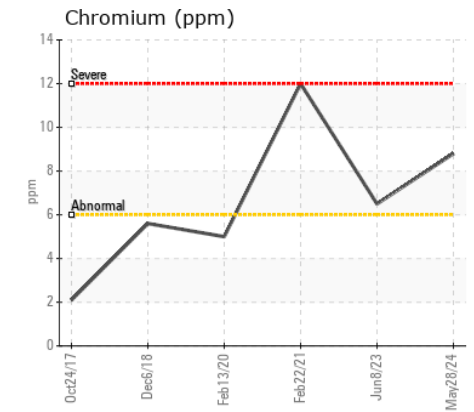
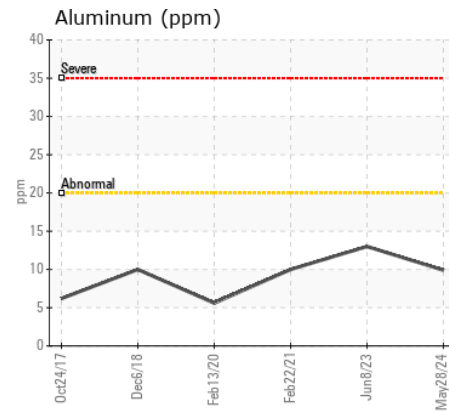
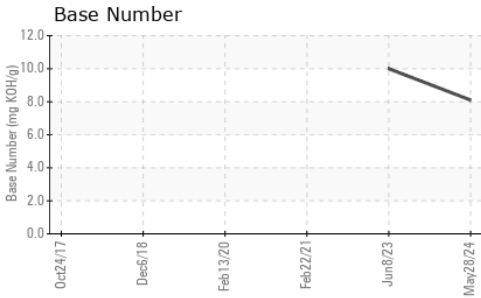
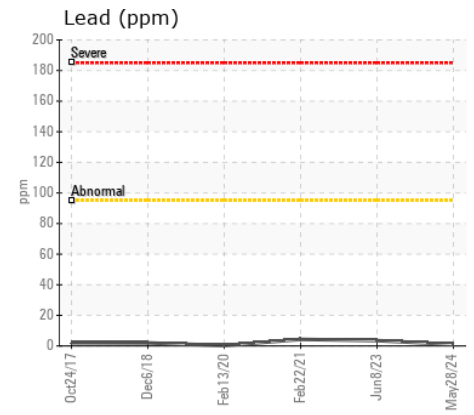
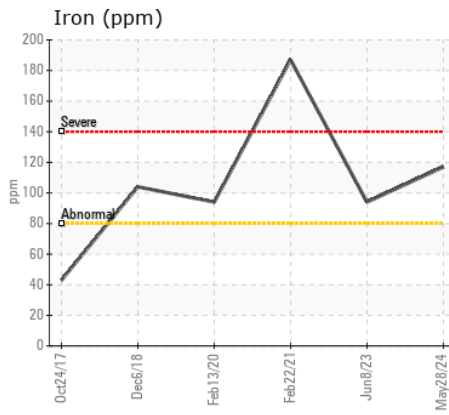
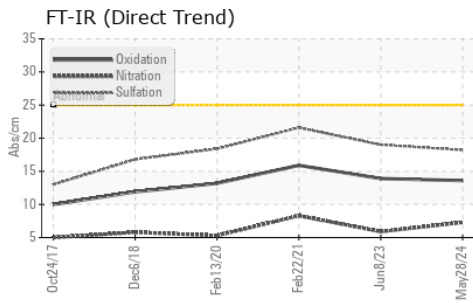
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>8</b>	7	16
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	3	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.4</b>	0.3	0.8
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.3</b>	5.9	8.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.2</b>	19.0	21.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>9</b>	15	5
Boron	ppm	ASTM D5185m		<b>28</b>	12	6
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>66</b>	58	63
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	2
Magnesium	ppm	ASTM D5185m		<b>487</b>	913	1115
Calcium	ppm	ASTM D5185m		<b>1526</b>	1017	1196
Phosphorus	ppm	ASTM D5185m		<b>944</b>	961	1018
Zinc	ppm	ASTM D5185m		<b>1107</b>	1148	1246
Sulfur	ppm	ASTM D5185m		<b>3587</b>	3062	2570
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.6</b>	13.9	15.9
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.1</b>	10.0	---
Visc @ 100°C	cSt	ASTM D445		<b>13.9</b>	13.9	13.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA057134 **Received** : 30 May 2024  
**Lab Number** : 06196089 **Tested** : 31 May 2024  
**Unique Number** : 11058212 **Diagnosed** : 02 Jun 2024 - Don Baldrige  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Helmuts Marine Service**  
 619 Canal Street  
 SAN RAFAEL, CA  
 US 94901-3545  
 Contact: NADINE URUIOLI  
 SERVICE@HELMUTSMARINE.COM  
 T: x:  
 F: x:

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.  
 Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)